

# Simple PHP Server

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- Runs a web server locally on your machine
- Uses built-in PHP web server
- Prints "Hello World" when accessed

# PHP Script Example

```
<?php
// Simple script to print Hello World
echo 'Hello World';
?>
```

- PHP programs are enclosed by `<?php ... ?>` .
- We can run PHP as a script, such as Python or Node (JavaScript).
  - To use this code as a script, run `php index.php` .
  - To use this code as a server-side code, run `php -S localhost:8000` .

# Starting PHP Server

1. Place your PHP file ( `index.php` ) in a project folder
2. Open a terminal and navigate to this folder
3. Run the server with the command:
  - You need to change the port number (8000) if another process uses it.

```
php -S localhost:8000
```

## Accessing the server

- Access <http://localhost:8000> via browser
  - You need to change the port number (8000) if you are using a different port.
  - You should see "Hello World" in your browser.

- Access via curl (command line tool)
  - You can also access your PHP server using the curl command, which is helpful for testing from the terminal or scripting API requests.
  - The response (e.g., "Hello World") will be printed directly in your terminal.

```
curl http://localhost:8000
```

## Using VSCode Extension

- Install "PHP Server" extension (Use **brapifra.phpserver** in the Extension search).
- Open your project folder and choose your PHP file ( `index.php` ) in the project folder.
- Use the extension:
  - Clicking on VSCode's PHP button (icon on the top-right corner).
  - To stop the PHP server, use the **PHP Server: Stop project** command from the Command Palette.



# Debugging a PHP program

- When you need to debug a PHP program, you can choose one of the three choices.
  - Use `error_log()` PHP function : The simplest
  - Use PHPStorm: Simple and Powerful
  - Use Xdebug: Complex, Powerful, and works with VSCode

## Use error\_log() function

```
$data = ['foo' => 'bar', 'baz' => 42];  
error_log(print_r($data, true), 3, __DIR__ . '/debug.log');
```

## Use PHPStorm

- Students can request a free license from JetBrains(<https://account.jetbrains.com/licenses>).
  - Download JetBrains ToolBox App(<https://www.jetbrains.com/toolbox-app/>)
  - Download PHPStorm
  - Open the PHP Project in PHPStorm.
  - Set breakpoints and run a debugger.

# Use Xdebug

## Check Xdebug installation status

- Command Line

```
php -m | grep xdebug
```

- Web application
  - Make this PHP program, and run the PHP server.
  - We can get all the PHP-related information.
    - Check where the php.ini is located.
    - Check if Xdebug is installed

```
<?php  
phpinfo();  
?>
```

## Installation of Xdebug

- Use <https://xdebug.org/docs/install> for the installation example.
  - For Mac/Linux, use `pecl`.

```
pecl install xdebug
```

- Check the installation.

```
smcho@m4 ~> php -v
PHP 8.4.11 (cli) (built: Jul 29 2025 15:30:21) (NTS)
Copyright (c) The PHP Group
Built by Homebrew
Zend Engine v4.4.11, Copyright (c) Zend Technologies
    with Xdebug v3.4.5, Copyright (c) 2002-2025, by Derick Rethans
    with Zend OPcache v8.4.11, Copyright (c), by Zend Technologies
```

## Update the php.ini

- Find the location of the php.ini file.
  - In this example,

```
smcho@m4 ~> php --ini
Configuration File (php.ini) Path: /opt/homebrew/etc/php/8.4
Loaded Configuration File:         /opt/homebrew/etc/php/8.4/php.ini
Scan for additional .ini files in: /opt/homebrew/etc/php/8.4/conf.d
Additional .ini files parsed:      /opt/homebrew/etc/php/8.4/conf.d/ext-opcache.ini
```

- edit "/opt/homebrew/etc/php/8.4/php.ini" to add the following.
- This is an example for Mac.
  - For Windows, find the location of the DLL and adjust
  - `zend_extension="C:\path\to\php\ext\php_xdebug.dll";`

```
zend_extension="xdebug.so"
xdebug.mode=debug
```

## What You Did

1. You made a web application that prints out "Hello, World" using PHP.
2. You deployed your web application locally on your computer using a PHP web server.
3. You accessed the web application locally via browser.
4. When you deploy your web application using a VPS (Virtual Private Server), anyone can access your web application.



## Next Steps

- Connect PHP with MySQL database